(54) Title: WIRELESS COMMUNICATION NETWORK ARCHITECTURE
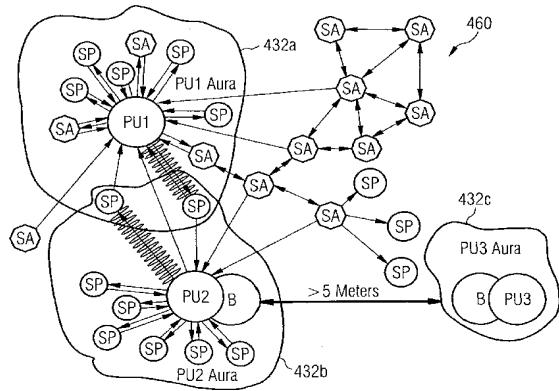
(57) Abstract: A heterogeneous wireless network topology is suited for low power, short-range and ubiquitous ad-hoc communication, said network topology being capable of integrating different wireless transmission technologies, in particular to a wireless sensor network (WSN) including different node types (PUs, SAs and/or SPs) and communication technologies. The network is highly heterogeneous and can be operated according to the master-slave principle or in a distributed ad-hoc manner. The nodes (PUs, SAs and/or SPs) can have different wireless communication means tailored to their individual role in the network and other constraints, thus allowing different communication patterns. A remote polling and control system (430, 450, 460, or 470) in a heterogeneous wireless sensor network (WSN) comprises a master node (PU) having an RF transceiver (aTx and aRx) for sending (SOa) a wake-up signal to at least one remote slave node (SP, SA) of a first and/or second type for polling (Sob) information detected by said slave node (SP) or triggering functions to be executed, sending (SOc) control information for triggering a function to be executed by at least one remotely controllable slave node (SA) of a second type and receiving (Sod) feedback information from the remotely controllable slave node (SA) of said second type, said slave nodes (SAs, SPs) being in a stand-by mode before and after being called by the master node (PU).

FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*